

KAKATIYA INSTITUTE OF TECHNOLOGY & SCIENCE

(An Autonomous Institute under Kakatiya University, Warangal)

(Approved by AICTE, New Delhi; Recognised by UGC under 2(f) & 12(B); Sponsored by EKASILA EDUCATION SOCIETY)

Opp : Yerragattu Gutta, Hasanparthy (Mandal), WARANGAL - 506 015, Telangana, INDIA.

काकतीय प्रौद्योगिकी एवं विज्ञान संस्थान, वरंगल - ५०६ ०१५

కాకతీయ సాంకేతిక విజ్ఞాన శాస్త్ర విద్యాలయం, వరంగల్ - ౫౦౬ ౦౧౫

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DEPARTMENT OF MECHANICAL ENGINEERING

VISION OF THE DEPARTMENT

- To be a centre of excellence in Mechanical Engineering, to provide the best teaching-learning and research environment, to produce high quality professionals and entrepreneurs to cater the needs of society.

MISSION OF THE DEPARTMENT

- To impart quality education that builds strong ethical attitude, technical knowledge and professional skills by providing congenial teaching-learning environment.
- To nurture the reasoning, problem solving and research capabilities of learners by providing the state-of-the-art facilities, to meet the changing needs of society.
- To inculcate life-long learning and leadership traits for successful professional careers, by counseling and mentoring.

PROGRAM EDUCATIONAL OBJECTIVES (PEOs)

PG - M. Tech. (DESIGN ENGINEERING)

PROGRAM EDUCATIONAL OBJECTIVES (PEOs)	The postgraduates of DESIGN ENGINEERING will be able to...
PEO1 (Research and Innovation)	engage in research, innovation and in teaching in Higher Education institutions
PEO2 (Technical expertise and Successful career)	excel in profession in industry, and entrepreneurship with updated technologies in the domain of design engineering
PEO3 (Soft skills and Lifelong learning)	exhibit professional ethics, effective communication and teamwork in solving engineering problems by adapting contemporary research towards sustainable development of society

PROGRAM OUTCOMES (POs) & PROGRAM SPECIFIC OUTCOMES (PSOs)	
PG – M.Tech. (DESIGN ENGINEERING)	
PROGRAM OUTCOMES (POs)	At the time of graduation, the postgraduates of DESIGN ENGINEERING will be able to ...
PO1	<i>independently carry out research /investigation and development work to solve practical problems</i>
PO2	<i>write and present an effective technical report/document</i>
PO3	<i>demonstrate competence in the area of design engineering</i>
PROGRAM SPECIFIC OUTCOMES (PSOs):	The postgraduates of DESIGN ENGINEERING will be able to...
PSO1	<i>apply knowledge of design engineering for development of effective and innovative solutions to engineering problems</i>
PSO2	<i>apply appropriate methodology, contemporary hardware and software tools to solve complex engineering problems in the domain of design engineering</i>



DEPARTMENT OF MECHANICAL ENGINEERING
KAKATIYA INSTITUTE OF TECHNOLOGY & SCIENCE, WARANGAL - 15
(An Autonomous Institute under Kakatiya University, Warangal)
SCHEME OF INSTRUCTION & EVALUATION FOR TWO YEAR POSTGRADUATE PROGRAMME
M.TECH. (DESIGN ENGINEERING)

PRR-20

SEMESTER-I

Sr. No.	Course Type	Course Code	Course Name	Teaching scheme			Credits	Evaluation Scheme										
				L	T	P		CIE -TA									ESE	Total Marks
								I ² RE				Minor	MSE	Total				
								ATLP	CRP	CP	PPT							
1	PC	P20DE101	Professional Core-1: Mechanical Vibrations	3	-	-	3	8	8	8	6	10	20	60	40	100		
2	PC	P20DE102	Professional Core-2: Computer Aided Design	3	-	-	3	8	8	8	6	10	20	60	40	100		
3	PE	P20DE103	Professional Elective-I/ MOOCs-I	3	-	-	3	8	8	8	6	10	20	60	40	100		
4	PE	P20DE104	Professional Elective-II/ MOOCs-II	3	-	-	3	8	8	8	6	10	20	60	40	100		
5	PC	P20DE105	Core Lab-I: (based on Professional Core-I) Mechanical Vibrations Lab	-	-	4	2	-	-	-	-	-	-	60	40	100		
6	PC	P20DE106	Core Lab-II: (based on Professional Core-II) CAD Lab	-	-	4	2	-	-	-	-	-	-	60	40	100		
7	MC	P20MC107	Research Methodology and IPR	2	-	-	2	8	8	8	6	10	20	60	40	100		
8	AC	P20AC108	Audit Course - 1	2	-	-	1	8	8	8	6	10	20	60	40	100		
Total:				16	-	8	19								480	320	800	

[L= Lecture, T = Tutorials, P = Practicals, C = Credits, ATLP = Assignments, CRP = Course Research Paper, CP = Course Patent, PPT = Course Presentation, Minor=Minor Examination, MSE=Mid Semester Examination and ESE=End Semester Examination]

Professional Elective-1/ MOOCs-I	Professional Elective-2/ MOOCs-II	Audit Course-1
P20DE103A: Fracture Mechanics P20DE103B: Stress Analysis P20DE103C: Additive Manufacturing P20DE103D: MOOCs	P20DE104A: Analysis and Synthesis of Mechanisms P20DE104B: Mathematical methods in Engineering P20DE104C: Computational Fluid Dynamics P20DE104D: MOOCs	P20AC108A: English for Research Paper Writing P20AC108B: Sanskrit for Technical Knowledge P20AC108C: Constitution of India P20AC108D: Pedagogy Studies

Total Contact Periods/Week: 24

Total Credits: 19



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SEMESTER-II

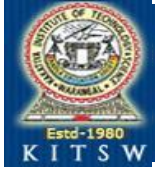
Sr. No.	Course Type	Course Code	Course Name	Teaching scheme			Credits	Evaluation Scheme								
				L	T	P		CIE - TA						ESE	Total Marks	
								PRE				Minor	MSE			Total
								ATLP	CRP	CP	PPT					
1	PC	P20DE201	Professional Core-3: Finite Element Methods	3	-	-	3	8	8	8	6	10	20	60	40	100
2	PC	P20DE202	Professional Core-4: Mechanics of Composite Materials	3	-	-	3	8	8	8	6	10	20	60	40	100
3	PE	P20DE203	Professional Elective-3/ MOOCs-III	3	-	-	3	8	8	8	6	10	20	60	40	100
4	PE	P20DE204	Professional Elective-3/ MOOCs-IV	3	-	-	3	8	8	8	6	10	20	60	40	100
5	PC	P20DE205	Core Lab-3:(based on Professional Core-3) FEM Lab	-	-	4	2	-	-	-	-	-	-	60	40	100
6	PC	P20DE206	Core Lab-4: (based on Professional Core-4) Composite Materials Lab	-	-	4	2	-	-	-	-	-	-	60	40	100
7	PROJ	P20DE207	Mini Project with Seminar	-	-	4	2	-	-	-	-	-	-	100	-	100
8	AC	P20AC208	Audit course - 2	2	-	-	1	8	8	8	6	10	20	60	40	100
Total:				14	-	12	19							520	280	800

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Professional Elective-3 / MOOCs-III	Professional Elective-4 / MOOCs-IV	Audit Course-2
P20DE203A: Tribology in Design P20DE203B: Robotics P20DE203C: Product Design P20DE203D: MOOCs	P20DE204A: Industrial Automation P20DE204B: Design of Machine Components P20DE204C: Design of Pressure vessels and Piping P20DE204D: MOOCs	P20AC208A: Stress Management by Yoga P20AC208B: Value Education P20AC208C: Personality Development through Life Enlightenment Skills P20AC208D: Disaster Management

Total Contact Periods/Week: 26

Total Credits: 19



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SEMESTER-III

Sr. No.	Course Type	Course Code	Course Name	Teaching scheme			Credits	Evaluation Scheme									
				L	T	P		CIE - TA							ESE	Total Marks	
								I ² RE				Minor	MSE	Total			
								ATLP	CRP	CP	PPT						
1	PE	P20DE301	Professional Elective-5/ MOOCs-V	3	-	-	3	8	8	8	6	10	20	60	40	100	
2	OE	P20OE302	Open Elective / MOOCs-VI	3	-	-	3	8	8	8	6	10	20	60	40	100	
3	PROJ	P20DE303	Dissertation Phase - I/Industrial Project <i>(to be continued in IV - Semester also as Dissertation Phase - II)</i>	-	-	18	9	-	-	-	-	-	-	100	-	100	
4	PROJ	P20DE304	Internship Evaluation	-	-	2	-	-	-	-	-	-	-	100	-	100	
Total:				6	-	20	15								320	80	400

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Professional Elective-5 / MOOCs-V	Open Elective/MOOCs
P20DE301A: Condition Monitoring P20DE301B: MEMS & Nanotechnology P20DE301C: Artificial Intelligence and Machine Learning P20DE301D: MOOCs	P20OE302A: Business Analytics P20OE302B: Industrial Safety P20OE302C: Operations Research P20OE302D: Cost Management of Engineering Projects P20OE302E: Composite Materials P20OE302F: Waste to Energy P20OE302G: Renewable Energy Sources P20OE302H: MOOCs

Total Contact Periods/Week: 26

Total Credits: 15

**SCHEME OF INSTRUCTION & EVALUATION FOR TWO YEAR POSTGRADUATE PROGRAMME
M.TECH. (DESIGN ENGINEERING)**

SEMESTER-IV

Sr. No.	Course Type	Course Code	Course Name	Teaching scheme			Credits	Evaluation Scheme								
				L	T	P		CIE - TA				ESE	Total Marks			
								I ² RE								
								ATLP	CRP	CP	PPT			Minor	MSE	Total
1	PROJ	P20DE401	Dissertation Phase - II	-	-	30	15	-	-	-	-	-	-	60	40	100
Total:				-	-	30	15	60							40	100

[L= Lecture, T = Tutorials, P = Practicals, C = Credits, ATLP = Assignments, CRP = Course Research Paper, CP = Course Patent, PPT = Course Presentation, Minor=Minor Examination, MSE=Mid Semester Examination and ESE=End Semester Examination]

Total Contact Periods/Week: 30

Total Credits: 15